

This listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Original) A composition comprising one or more immunogenic portions from one or more Group A streptococci serum opacity factor(s) (SOF) and a biologically acceptable diluent wherein said polypeptide is capable of eliciting a protective immune response when administered *in vivo* to a mammal.
2. (Original) The composition of claim 1 wherein said Group A streptococci is *Streptococcus pyogenes*.
3. (Original) The composition of claim 2 wherein said SOF is selected from the group consisting of *S. pyogenes* SOF2 (SEQ ID NO: 1), SOF4 (SEQ ID NO: 3), and SOF28 (SEQ ID NO: 5).
4. (Original) The composition of claim 2 wherein said SOF is selected from the group consisting of *S. pyogenes* SOF 8 (SEQ ID NO: 30), 9 (SEQ ID NO: 31), 11 (SEQ ID NO: 32), 13 (SEQ ID NO: 33), 15, 22 (SEQ ID NO: 34), 25 (SEQ ID NO: 35), 27 (SEQ ID NO: 36), 44 (SEQ ID NO: 37), 48 (SEQ ID NO: 38), 49 (SEQ ID NO: 39), 58 (SEQ ID NO: 40), 59 (SEQ ID NO: 41), 60 (SEQ ID NO: 42), 61 (SEQ ID NO: 43), 62 (SEQ ID NO: 44), 63 (SEQ ID NO: 45), 64, 66 (SEQ ID NO: 46), 68 (SEQ ID NO: 47), 73 (SEQ ID NO: 48), 75 (SEQ ID NO: 49), 76 (SEQ ID NO: 50), 77 (SEQ ID NO: 51), 78 (SEQ ID NO: 52), 79 (SEQ ID NO: 53), 81 (SEQ ID NO: 54), 87 (SEQ ID NO: 55), 103, 104, 106, 107, 109, 110, 112, 113, 114, 117, 118, and 124.
5. (Original) A composition comprising one or more immunogenic portions from one or more Group C streptococci fibronectin-binding protein (FnBA) and a biologically acceptable diluent wherein said polypeptide is capable of eliciting a protective immune response when administered *in vivo* to a mammal.

6. (Original) The composition of claim 5 wherein said Group C streptococci is *Streptococcus dysgalactiae*.

7. (Original) The composition of claim 6 wherein said FnBA is selected from the group consisting of *S. dysgalactiae* FnBA.

8. (Original) A composition comprising one or more common immunogenic *S. pyogenes* SOF epitopes selected from the group consisting of ETEPQTM DVEQYTV DKENS (SEQ ID NO: 15), DIFDVKREVKTNGDGTLDVLT (SEQ ID NO: 16), PKQIDEGADVMALLDVSQKM (SEQ ID NO: 17), FDKAKEQIKKLVTTLT (SEQ ID NO: 18), YNRRNSVRLMTFYR (SEQ ID NO: 19), WGDVLQGAIHKAREIFNKEK (SEQ ID NO: 20), RQHIVLFSQGESTFSYDIK (SEQ ID NO: 21), TTSNPLFPWLPIFNHT (SEQ ID NO: 22), FDYSKRVGEGYYYHSFSDR (SEQ ID NO: 23), ERNEKFDNYLKEMSEGGK (SEQ ID NO: 24), DVDKADKFKDTEL (SEQ ID NO: 25), TKESLTWTISKD (SEQ ID NO: 26), and SLTLKYKLVNKDKL (SEQ ID NO: 27) and a biologically acceptable diluent or adjuvant.

9. (Original) A fusion protein comprising two or more immunogenic portions of one or more *S. pyogenes* serum opacity factor polypeptide wherein said *S. pyogenes* serum opacity factor is selected from the group consisting of SOF 2 (SEQ ID NO: 1), 4 (SEQ ID NO: 3), 8 (SEQ ID NO: 30), 9 (SEQ ID NO: 31), 11 (SEQ ID NO: 32), 13 (SEQ ID NO: 33), 15, 22 (SEQ ID NO: 34), 25 (SEQ ID NO: 35), 27 (SEQ ID NO: 36), 28 (SEQ ID NO: 5), 44 (SEQ ID NO: 37), 48 (SEQ ID NO: 38), 49 (SEQ ID NO: 39), 58 (SEQ ID NO: 40), 59 (SEQ ID NO: 41), 60 (SEQ ID NO: 42), 61 (SEQ ID NO: 43), 62 (SEQ ID NO: 44), 63 (SEQ ID NO: 45), 64, 66 (SEQ ID NO: 46), 68 (SEQ ID NO: 47), 73 (SEQ ID NO: 48), 75 (SEQ ID NO: 49), 76 (SEQ ID NO: 50), 77 (SEQ ID NO: 51), 78 (SEQ ID NO: 52), 79 (SEQ ID NO: 53), 81 (SEQ ID NO: 54), 87 (SEQ ID NO: 55), 103, 104, 106, 107, 109, 110, 112, 113, 114, 117, 118, and 124.


10. (Original) The fusion protein of claim 9 wherein said fusion protein comprises two or more common immunogenic SOF epitopes selected from the group consisting of ETEPQTM DVEQYTV DKENS (SEQ ID NO: 15), DIFDVKREVKTNGDGTLDVLT (SEQ ID NO: 16), PKQIDEGADVMALLDVSQKM (SEQ ID NO: 17), FDKAKEQIKKLVTTLT (SEQ ID NO: 18), YNRRNSVRLMTFYR (SEQ ID NO: 19), WGDVLQGAIHKAREIFNKEK (SEQ ID NO: 20), RQHIVLFSQGESTFSYDIK (SEQ ID NO: 21), TTSNPLFPWLPIFNHT (SEQ ID NO: 22), FDYSKRVGEGYYYHSFSDR (SEQ ID NO: 23), ERNEKFDNYLKEMSEGGK (SEQ ID NO: 24), DVDKADKFKDTEL (SEQ ID NO: 25), TKESLTWTISKD (SEQ ID NO: 26), and SLTLKYKLVNKDKL (SEQ ID NO: 27) and a biologically acceptable diluent or adjuvant.

16), PKQIDEGADVMALLDVSQKM (SEQ ID NO: 17), FDKAKEQIKKLVTTLT (SEQ ID NO: 18), YNRRNSVRLMTFYR (SEQ ID NO: 19), WGDVLQGAIHKAREIFNKEK (SEQ ID NO: 20), RQHIVLFSQGESTFSYDIK (SEQ ID NO: 21), TTSNPLFPWLPIFNHT (SEQ ID NO: 22), FDYSKRVGEGYYYHSFSDR (SEQ ID NO: 23), ERNEKFDNYLKEMSEGGK (SEQ ID NO: 24), DVDKADKFKDTLTEL (SEQ ID NO: 25), TKESLTWTISKD (SEQ ID NO: 26), and SLTLKYKLVNKDKL (SEQ ID NO: 27).

11. (Original) A fusion protein comprising one or more immunogenic portions of an *S. pyogenes* serum opacity factor polypeptide and one or more immunogenic portions of a non-SOF *S. pyogenes* polypeptide.

12. (Original) The fusion protein of claim 11 wherein said immunogenic portions of an *S. pyogenes* serum opacity factor polypeptide comprises one or more common immunogenic *S. pyogenes* SOF epitopes selected from the group consisting of ETEPQTMDVEQYTVDKENS (SEQ ID NO: 15), DIFDVKREVKTNGDGTLDVLT (SEQ ID NO: 16), PKQIDEGADVMALLDVSQKM (SEQ ID NO: 17), FDKAKEQIKKLVTTLT (SEQ ID NO: 18), YNRRNSVRLMTFYR (SEQ ID NO: 19), WGDVLQGAIHKAREIFNKEK (SEQ ID NO: 20), RQHIVLFSQGESTFSYDIK (SEQ ID NO: 21), TTSNPLFPWLPIFNHT (SEQ ID NO: 22), FDYSKRVGEGYYYHSFSDR (SEQ ID NO: 23), ERNEKFDNYLKEMSEGGK (SEQ ID NO: 24), DVDKADKFKDTLTEL (SEQ ID NO: 25), TKESLTWTISKD (SEQ ID NO: 26), and SLTLKYKLVNKDKL (SEQ ID NO: 27).

13. (Original) The fusion protein of claim 11 wherein said non-SOF-based polypeptide is selected from the group consisting of *S. pyogenes* M protein, R28 protein, SPA, C5a peptidase, SFB1 (also known as protein F1), and FBP54.

14. (Currently Amended) A cocktail comprising two or more immunogenic portions of [[a]] two or more *S. pyogenes* serum opacity factor polypeptides wherein said *S. pyogenes* serum opacity factor is selected from the group consisting of SOF 2 (SEQ ID NO: 1), 4 (SEQ ID NO: 3), 8 (SEQ ID NO: 30), 9 (SEQ ID NO: 31), 11 (SEQ ID NO: 32), 13 (SEQ ID NO: 33), 15, 22 (SEQ ID NO: 34), 25 (SEQ ID NO: 35), 27 (SEQ ID NO: 36), 28 (SEQ ID NO: 5), 44 (SEQ ID NO: 37), 48 {S:\20638\1203595-us1\80056107.DOC  }

(SEQ ID NO: 38), 49 (SEQ ID NO: 39), 58 (SEQ ID NO: 40), 59 (SEQ ID NO: 41), 60 (SEQ ID NO: 42), 61 (SEQ ID NO: 43), 62 (SEQ ID NO: 44), 63 (SEQ ID NO: 45), 64, 66 (SEQ ID NO: 46), 68 (SEQ ID NO: 47), 73 (SEQ ID NO: 48), 75 (SEQ ID NO: 49), 76 (SEQ ID NO: 50), 77 (SEQ ID NO: 51), 78 (SEQ ID NO: 52), 79 (SEQ ID NO: 53), 81 (SEQ ID NO: 54), 87 (SEQ ID NO: 55), 103, 104, 106, 107, 109, 110, 112, 113, 114, 117, 118, and 124.

15. (Original) The cocktail of claim 14 wherein one or more of said serum opacity factor polypeptides comprises a common immunogenic SOF epitopes selected from the group consisting of ETEPQTM DVEQYTV DKENS (SEQ ID NO: 15), DIFDV KREVKTNGDGTLDVLT (SEQ ID NO: 16), PKQIDEGADVMALLDVSQKM (SEQ ID NO: 17), FDKAKEQIKKLVTTLT (SEQ ID NO: 18), YNRRNSVRLMTFYR (SEQ ID NO: 19), WGDVLQGAIHKAREIFNKEK (SEQ ID NO: 20), RQHIVLFSQGESTFSYDIK (SEQ ID NO: 21), TTSNPLFPWLPIFNHT (SEQ ID NO: 22), FDYSKRVGEGYYYHSFSDR (SEQ ID NO: 23), ERNEKFDNYLKEMSEGGK (SEQ ID NO: 24), DVDKADKFKDTLTEL (SEQ ID NO: 25), TKESLTWTISKD (SEQ ID NO: 26), and SLTLKYKLVNKDKL (SEQ ID NO: 27).

16. (Original) A cocktail comprising one or more immunogenic portion of an *S. pyogenes* serum opacity factor polypeptide and one or more immunogenic portion of a non-SOF *S. pyogenes* polypeptide.

17. (Original) The cocktail of claim 16 wherein said cocktail comprises one or more common immunogenic *S. pyogenes* SOF epitopes selected from the group consisting of ETEPQTM DVEQYTV DKENS (SEQ ID NO: 15), DIFDV KREVKTNGDGTLDVLT (SEQ ID NO: 16), PKQIDEGADVMALLDVSQKM (SEQ ID NO: 17), FDKAKEQIKKLVTTLT (SEQ ID NO: 18), YNRRNSVRLMTFYR (SEQ ID NO: 19), WGDVLQGAIHKAREIFNKEK (SEQ ID NO: 20), RQHIVLFSQGESTFSYDIK (SEQ ID NO: 21), TTSNPLFPWLPIFNHT (SEQ ID NO: 22), FDYSKRVGEGYYYHSFSDR (SEQ ID NO: 23), ERNEKFDNYLKEMSEGGK (SEQ ID NO: 24), DVDKADKFKDTLTEL (SEQ ID NO: 25), TKESLTWTISKD (SEQ ID NO: 26), and SLTLKYKLVNKDKL (SEQ ID NO: 27).

18. (Original) The cocktail of claim 16 wherein said non-SOF-based polypeptide is selected from the group consisting of *S. pyogenes* M protein, R28 protein, SPA, C5a peptidase, SFB1 (also know as protein F1), and FBP54.

19. (Original) An isolated antibody that specifically binds to an *S. pyogenes* serum opacity factor wherein said antibody is capable of facilitating opsonization of said *S. pyogenes*.

20. (Original) The antibody of claim 19 wherein said *S. pyogenes* serum opacity factor is selected from the group consisting of *S. pyogenes* SOF 2 (SEQ ID NO: 1), 4 (SEQ ID NO: 3), 8 (SEQ ID NO: 30), 9 (SEQ ID NO: 31), 11 (SEQ ID NO: 32), 13 (SEQ ID NO: 33), 15, 22 (SEQ ID NO: 34), 25 (SEQ ID NO: 35), 27 (SEQ ID NO: 36), 28 (SEQ ID NO: 5), 44 (SEQ ID NO: 37), 48 (SEQ ID NO: 38), 49 (SEQ ID NO: 39), 58 (SEQ ID NO: 40), 59 (SEQ ID NO: 41), 60 (SEQ ID NO: 42), 61 (SEQ ID NO: 43), 62 (SEQ ID NO: 44), 63 (SEQ ID NO: 45), 64, 66 (SEQ ID NO: 46), 68 (SEQ ID NO: 47), 73 (SEQ ID NO: 48), 75 (SEQ ID NO: 49), 76 (SEQ ID NO: 50), 77 (SEQ ID NO: 51), 78 (SEQ ID NO: 52), 79 (SEQ ID NO: 53), 81 (SEQ ID NO: 54), 87 (SEQ ID NO: 55), 103, 104, 106, 107, 109, 110, 112, 113, 114, 117, 118, and 124.


21. (Original) The antibody of claim 19 wherein said serum opacity factor is selected from the group consisting of SOF2 (SEQ ID NO: 1), SOF4 (SEQ ID NO: 3), and SOF28 (SEQ ID NO: 5).

22. (Original) The antibody of claim 15 wherein said serum opacity factor polypeptides comprises a common immunogenic SOF epitopes selected from the group consisting of ETEPQTMDEQYTVDKENS (SEQ ID NO: 15), DIFDVKREVKTNMGDGLDVLT (SEQ ID NO: 16), PKQIDEGADVMDLLDVSQKM (SEQ ID NO: 17), FDKAKEQIKKLVTTLT (SEQ ID NO: 18), YNRRNSVRLMTFYR (SEQ ID NO: 19), WGDVLQGAIHKAREIFNKEK (SEQ ID NO: 20), RQHIVLFSQGESTFSYDIK (SEQ ID NO: 21), TTSNPLFPWLPFNHT (SEQ ID NO: 22), FDYSKRVGEGYYYHSFSDR (SEQ ID NO: 23), ERNEKFDNYLKEMSEGGK (SEQ ID NO: 24), DVDKADKFKDTLTEL (SEQ ID NO: 25), TKESLTWTISKD (SEQ ID NO: 26), and SLTLKYKLKVNKDKL (SEQ ID NO: 27).

27. (Original) A method of eliciting an *in vivo* antibody response against *S. pyogenes* in a mammal, said method comprising the step of administering to said mammal a fusion protein comprising two or more immunogenic portions of one or more *S. pyogenes* serum opacity factor polypeptides wherein said *S. pyogenes* serum opacity factor is selected from the group consisting of *S. pyogenes* SOF 2 (SEQ ID NO: 1), 4 (SEQ ID NO: 3), 8 (SEQ ID NO: 30), 9 (SEQ ID NO: 31), 11 (SEQ ID NO: 32), 13 (SEQ ID NO: 33), 15, 22 (SEQ ID NO: 34), 25 (SEQ ID NO: 35), 27 (SEQ ID NO: 36), 28 (SEQ ID NO: 5), 44 (SEQ ID NO: 37), 48 (SEQ ID NO: 38), 49 (SEQ ID NO: 39), 58 (SEQ ID NO: 40), 59 (SEQ ID NO: 41), 60 (SEQ ID NO: 42), 61 (SEQ ID NO: 43), 62 (SEQ ID NO: 44), 63 (SEQ ID NO: 45), 64, 66 (SEQ ID NO: 46), 68 (SEQ ID NO: 47), 73 (SEQ ID NO: 48), 75 (SEQ ID NO: 49), 76 (SEQ ID NO: 50), 77 (SEQ ID NO: 51), 78 (SEQ ID NO: 52), 79 (SEQ ID NO: 53), 81 (SEQ ID NO: 54), 87 (SEQ ID NO: 55), 103, 104, 106, 107, 109, 110, 112, 113, 114, 117, 118, and 124.

28. (Original) The method of claim 27 wherein said fusion protein comprises two or more common immunogenic SOF epitopes selected from the group consisting of ETEPQTM DVEQYTV DKENS (SEQ ID NO: 15), DIFDVKREVKTNGDGTLDVLT (SEQ ID NO: 16), PKQIDEGADV MALLDVSQKM (SEQ ID NO: 17), FDKAKEQIKKLVTTLT (SEQ ID NO: 18), YNRRNSVRLMTFYR (SEQ ID NO: 19), WGDVLQGAIHKAREIFNKEK (SEQ ID NO: 20), RQHIVLFSQGESTFSYDIK (SEQ ID NO: 21), TTSNPLFPWLPIFNHT (SEQ ID NO: 22), FDYSKRVGEGYYYHSFSDR (SEQ ID NO: 23), ERNEKFDNYLKEMSEGGK (SEQ ID NO: 24), DVDKADKFKDTLTEL (SEQ ID NO: 25), TKESLTWTISKD (SEQ ID NO: 26), and SLTLKYKLKVNKDKL (SEQ ID NO: 27).

29. (Original) The method of claim 27 wherein said fusion protein comprises one or more immunogenic portions of an *S. pyogenes* serum opacity factor polypeptide and one or more immunogenic portions of a non-SOF *S. pyogenes* polypeptide.

30. (Original) The method of claim 27 wherein said fusion protein comprises one or more common immunogenic *S. pyogenes* SOF epitopes selected from the group consisting of {S:\20638\1203595-us1\80056107.DOC  }

18), YNRRNSVRLMTFYR (SEQ ID NO: 19), WGDVLQGAIHKAREIFNKEK (SEQ ID NO: 20), RQHIVLFSQGESTFSYDIK (SEQ ID NO: 21), TTSNPLFPWLPIFNHT (SEQ ID NO: 22), FDYSKRVGEGYYYHSFSDR (SEQ ID NO: 23), ERNEKFDNYLKEMSEGGK (SEQ ID NO: 24), DVDKADKFKDTLTEL (SEQ ID NO: 25), TKESLTWTISKD (SEQ ID NO: 26), and SLTLKYKLVNKDKL (SEQ ID NO: 27).

34. (Original) The method of claim 32 wherein said cocktail comprises one or more immunogenic portion of an *S. pyogenes* serum opacity factor polypeptide and one or more immunogenic portion of a non-SOF *S. pyogenes* polypeptide.

35. (Original) The method of claim 32 wherein said cocktail comprises one or more common immunogenic *S. pyogenes* SOF epitopes selected from the group consisting of ETEPQTM DVEQYTVDKENS (SEQ ID NO: 15), DIFDVKREVKTNGDGTLDVLT (SEQ ID NO: 16), PKQIDEGADVMALLDVSQKM (SEQ ID NO: 17), FDKAKEQIKKLVTTLT (SEQ ID NO: 18), YNRRNSVRLMTFYR (SEQ ID NO: 19), WGDVLQGAIHKAREIFNKEK (SEQ ID NO: 20), RQHIVLFSQGESTFSYDIK (SEQ ID NO: 21), TTSNPLFPWLPIFNHT (SEQ ID NO: 22), FDYSKRVGEGYYYHSFSDR (SEQ ID NO: 23), ERNEKFDNYLKEMSEGGK (SEQ ID NO: 24), DVDKADKFKDTLTEL (SEQ ID NO: 25), TKESLTWTISKD (SEQ ID NO: 26), and SLTLKYKLVNKDKL (SEQ ID NO: 27).

36. (Original) The method of claim 32 wherein said non-SOF-based polypeptide is selected from the group consisting of *S. pyogenes* M protein, R28 protein, SPA, C5a peptidase, SFB1 (also known as protein F1), and FBP54.

37. (Original) A method of treating an *S. pyogenes* infection in a mammal, said method comprising the step of administering to said mammal an antibody that specifically binds to an *S. pyogenes* serum opacity factor wherein said antibody is capable of facilitating opsonization of said *S. pyogenes*.

38. (Original) The method of claim 37 wherein said *S. pyogenes* serum opacity factor is selected from the group consisting of *S. pyogenes* SOF 2 (SEQ ID NO: 1), 4 (SEQ ID NO: 3), 8 (SEQ ID NO: 30), 9 (SEQ ID NO: 31), 11 (SEQ ID NO: 32), 13 (SEQ ID NO: 33), 15, 22 (SEQ ID NO: 34), 25 (SEQ ID NO: 35), 27 (SEQ ID NO: 36), 28 (SEQ ID NO: 5), 44 (SEQ ID NO: 37), 48 (SEQ ID NO: 38), 49 (SEQ ID NO: 39), 58 (SEQ ID NO: 40), 59 (SEQ ID NO: 41), 60 (SEQ ID NO: 42), 61 (SEQ ID NO: 43), 62 (SEQ ID NO: 44), 63 (SEQ ID NO: 45), 64, 66 (SEQ ID NO: 46), 68 (SEQ ID NO: 47), 73 (SEQ ID NO: 48), 75 (SEQ ID NO: 49), 76 (SEQ ID NO: 50), 77 (SEQ ID NO: 51), 78 (SEQ ID NO: 52), 79 (SEQ ID NO: 53), 81 (SEQ ID NO: 54), 87 (SEQ ID NO: 55), 103, 104, 106, 107, 109, 110, 112, 113, 114, 117, 118, and 124.

39. (Original) The method of claim 37 wherein said serum opacity factor is selected from the group consisting of SOF2 (SEQ ID NO: 1), SOF4 (SEQ ID NO: 3), and SOF28 (SEQ ID NO: 5).

40. (Original) The method of claim 37 wherein said serum opacity factor polypeptides comprises a common immunogenic SOF epitopes selected from the group consisting of ETEPQTM DVEQYTV DKENS (SEQ ID NO: 15), DIFDVKREVKTNGDGTLDVLT (SEQ ID NO: 16), PKQIDEGADV MALLDVSQKM (SEQ ID NO: 17), FDKAKEQIKKLVTTLT (SEQ ID NO: 18), YNRRNSVRLMTFYR (SEQ ID NO: 19), WGDVLQGAIHKAREIFNKEK (SEQ ID NO: 20), RQHIVLFSQGESTFSYDIK (SEQ ID NO: 21), TTSNPLFPWLPIFNHT (SEQ ID NO: 22), FDYSKRVGEGYYYHSFSDR (SEQ ID NO: 23), ERNEKFDNYLKEMSEGGK (SEQ ID NO: 24), DVDKADKFKDTLTEL (SEQ ID NO: 25), TKESLTWTISKD (SEQ ID NO: 26), and SLTLKYKLVNKDKL (SEQ ID NO: 27).